## Rocky Flats Environmental Technology Site

Revision 3

## KAISER-HILL TEAM QUALITY ASSURANCE PROGRAM

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KAISER-HILL	
<b>QUALITY ASSURANCE</b>	Ξ
PROGRAM	

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#### 1.0 PURPOSE

This document is the Rocky Flats Environmental Technology Site (Site) Kaiser-Hill Team Quality Assurance Program (QAP) This QAP has been developed as required by 10 CFR 830 120, Quality Assurance Requirements, and Department of Energy (DOE) Order 5700 6C, Quality Assurance This QAP discusses how the QA criteria of 10 CFR 830 120 and DOE Order 5700 6C are being met and the roles and responsibilities of the Kaiser-Hill Company, L L C (Kaiser-Hill), the Integrating Management Contractor (IMC), and the four Principal Subcontractors. DynCorp of Colorado, Inc (DCI), Rocky Mountain Remediation Services, L L C (RMRS), Safe Sites of Colorado (SSOC), and Wackenhut Services, L L C (WSLLC) Kaiser-Hill and the four Principal Subcontractors comprise the Kaiser-Hill Team

Each of the individual Principal Subcontractors shall develop company specific QAPs (to be called Quality Assurance Program Plans or QAPPs) to describe how their company will comply with the Kaiser-Hill Team QAP or use the Kaiser-Hill Team QAP as their program Kaiser-Hill will work to the Kaiser-Hill Team QAP

#### 2.0 SCOPE

This Kaiser-Hill Team QAP (referred to as the QAP) provides a road map for organizations, management, and stakeholders to help them understand how the Quality Assurance (QA) requirements are implemented. It is applicable to the IMC, Principal Subcontractors, and organizations working under the direction of the IMC or the Principal Subcontractors.

The Kaiser-Hill Team QAP describes roles, responsibilities, and commitments for implementing the requirements of 10 CFR 830 120 for nuclear facilities and activities, and DOE Order 5700 6C for non-nuclear facilities, activities, and services This is a revision to and supersedes the Site QAP dated May 2, 1996

#### 3.0 DEFINITIONS AND ACRONYMS

Nonreactor Nuclear Facility - Activities or operations that involve radioactive and/or fissionable materials in such form and quantity that a nuclear hazard potentially exists to the employees or the general public. Incidental use and generating of radioactive materials in a facility operation (e.g., check and calibration sources, use of radioactive sources in research and experimental and analytical laboratory activities, electron microscopes, and X-ray machines) would not ordinarily require the facility to be included in this definition. Transportation of radioactive materials, accelerators and reactors and their operations are not included. The application of any rule to a nonreactor nuclear facility shall be applied using a graded approach. Included are activities or operations that

(1) Produce, process, or store radioactive liquid or solid waste, fissionable materials, or tritium,

- (2) Conduct separations operations,
- (3) Conduct irradiated materials inspection, fuel fabrication, decontamination, or recovery operations,
- (4) Conduct fuel enrichment operations,
- (5) Perform environmental remediation or waste management activities involving radioactive materials, or
- (6) Design, manufacture, or assemble items for use with radioactive materials and/or fissionable materials in such form or quantity that a nuclear hopotentially exists

(Emphasis added) (10 CFR 830 3, Definitions)

Nuclear Facility - Reactor and nonreactor nuclear facilities (10 CFR 830 3, Definitions) Note The requirements of 10 CFR 830 120 also apply to a nuclear facility under construction

Quality - The condition achieved when an item, service, or process meets or exceeds the user's requirements and expectations (10 CFR 830 3, Definitions)

Quality Assurance - All those actions that provide confidence that quality is achieved (10 CFR 830 3, Definitions)

Quality Assurance Program (QAP) - The overall program established to assign responsibilities and authorities, define policies and requirements, and provide for the performance and assessment of work (10 CFR 830 3, Definitions) Quality Assurance Program Plan (QAPP) - The document of a Principal Subcontractor expressing how the Principal Subcontractor will comply with the applicable requirements of the Kaiser-Hill Team QAP A Principal Subcontractor QAPP may be satisfied by documented endorsement of the Kaiser-Hill Team QAP

Other quality related definitions can be found in the Glossary of Terms in the Quality Assurance Manual

The following acronyms are used in this document

ASAP	Accelerated Site Action Project
CCCP	Configuration Change Control Program
COEM	Conduct of Engineering Manual
DCI	DynCorp of Colorado, Inc
DOE	Department of Energy
EPA	Environmental Protection Agency
H & S	Kaiser-Hill, Health & Safety
IMC	Integrating Management Contractor
IP	Implementation Plan

Kaiser-Hill Company, LLC
Kaiser-Hill Team Kaiser-Hill and the Principal Subcontractors

MAL M&TE	Master Activity List
Ops	Measuring and Test Equipment Operations
PA PA	Protected Area
QA	Quality Assurance
QAP	Quality Assurance Program
QAPP	Quality Assurance Program Plan
RFFO	Rocky Flats Field Office
RMRS	Rocky Mountain Remediation Services, L L C
SAR	Safety Analysis Report
Site	Rocky Flats Environmental Technology Site
SNM	Special Nuclear Material
S/RID	Standards/Requirements Identification Document
SSOC	Safe Sites of Colorado
TUM	Training User's Manual
VSS	Vital Safety Systems
WSLLC	Wackenhut Services, L L C

## 4.0 STANDARDS AND REQUIREMENTS

The Kaiser-Hill contract with DOE contains the list of DOE Directives imposed on the Kaiser-Hill Team by DOE. The Kaiser-Hill Team QA requirements are identified in the Quality Assurance Program Criteria document. The foundation upon which the Quality Assurance Program Criteria document was developed was the DOE Environment, Safety, and Health Configuration Guide. The Quality Assurance Program Criteria document began with a search for QA regulations, orders, and consensus standards, without regard to applicability. In all, 28 QA documents were identified and obtained. The QA documents were reviewed for possible applicability to Site activities. Several documents were set aside due to not being applicable.

A hierarchy of the documents was selected to place a relative level of importance on the documents in case of conflict between documents. The QA criteria of 10 CFR 830 120 and DOE Order 5700 6C were incorporated. The remaining applicable documents were reviewed and items selected that, in the opinion of the writers, best described specific features that the criteria of 10 CFR 830 120 and DOE Order 5700 6C required. In the end, several documents remained that were applicable but not used. This was because they were redundant to, or not as clear as, those items selected from other sources. They are listed in the Quality Assurance Program Criteria document.

During the development process, the writers discussed the requirements identified in the Quality Assurance Program Criteria document with knowledgeable persons. For example, the U.S. Environmental Protection Agency (EPA) manager for QA in the Denver office was contacted regarding environmental requirements. His guidance was that the current draft of EPA Order 5360 1 should be used and that a program meeting the requirements of ANSI/ASQC E4-1994 would be acceptable. Site experts were consulted concerning Documents and Records and Procurement. When the Quality Assurance Program Criteria document was developed, a group of others with

QA experience in the DOE complex or the nuclear power industry reviewed it Based on their comments and using an iterative process, the Quality Assurance Program Criteria document, as well as this QAP, are further refined The Quality Assurance Program Criteria document is, and this QAP will be, issued as sections in the Site QA Manual

Using the DOE closure process for necessary and sufficient sets of standards, Kaiser-Hill intends to develop a set of requirements (which are to ultimately replace the set contained in the Kaiser-Hill/DOE contract) in the form of Standards/Requirements Identification Documents (S/RIDs) that contain a necessary and sufficient set of standards. When the S/RIDs are approved by DOE in Authorization Agreements, they will replace the list of DOE Directives in the contract.

When the QA S/RID is approved by DOE, it will replace the Quality Assurance Program Criteria document (Note If the approved S/RID results in the need to change the QAP, such changes will be made) The requirements were selected from the following technical standards

- ASME-NQA-1-1994, Quality Assurance Requirements for Nuclear Facility Applications, 1994
- ANSI/ASQC-E4-1994, Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs
- EPA-5360 1, Program and Policy Requirements to Implement the Mandatory Quality Assurance Program
- ASTM-C-1009-89, Standard Guide for Establishing a Quality Assurance Program for Analytical Chemistry Laboratories Within the Nuclear Industry
- DOE/AL-OC-1,1995, Quality Criteria
- ANSI/NCSL Z540-1-1994, Calibration Laboratories and Measuring and Test Equipment General Requirements

Standards that are required by law or contract are mandatory unless a temporary or permanent exemption from that requirement has been granted by one having proper regulatory authority. The criteria for granting an exemption to a DOE nuclear safety requirement are specified in 10 CFR 820 62, Criteria.

## 5.0 GENERAL INFORMATION

### 5.1 **Program Overview**

This Kaiser-Hill Team QAP describes the roles, responsibilities and commitments for implementing the requirements of 10 CFR 830 120 for nuclear facilities and activities with the potential to cause radiological harm and DOE Order 5700 6C for non-nuclear facilities, activities and services

Since 10 CFR 830 120 and DOE Order 5700 6C include essentially the same criteria, the IMC has incorporated the requirements into a single program document. The primary distinction between the two requirements is

enforceability and applicability From the perspective of applicability and enforceability, 10 CFR 830 120 applies to nuclear facilities and activities with the potential to cause radiological harm and DOE Order 5700 6C applies to non-nuclear facilities, activities, and services

On July 1, 1995, Kaiser-Hill became the IMC for the Site under a performance-based contract. As the IMC, Kaiser-Hill has overall responsibility for the Site and implements the Site mission through four Principal Subcontractors. Each of the Principal Subcontractors have specific areas of responsibility. DCI provides sitewide services in support of nuclear facilities such as records management, occupational medicine, transportation, emergency preparedness, limited maintenance, and receipt inspection. RMRS performs Site environmental remediation and waste management and is responsible for several specific nuclear facilities. SSOC performs operations and maintenance for the majority of the Site's nuclear facilities. WSLLC provides security services for the Site. Kaiser-Hill and the Principal Subcontractors form the Kaiser-Hill.

Due to the varied nature of the activities and responsibilities being performed, the individual Principal Subcontractors are responsible for specific programs and activities that are unique to their area of expertise. As such, each of the individual Principal Subcontractors shall develop company-specific QAPPs to describe how their company will comply with the Kaiser-Hill Team QAP to accomplish their specific mission or use the Kaiser-Hill Team QAP as their program. Kaiser-Hill will work to the Kaiser-Hill Team QAP.

The Site is in the post production, cleanup, and closure phase of its life cycle Major planning activities are currently underway to support accelerated closure over the next decade. Included in this planning are the identification and prioritization of facilities for decontamination, deactivation, decommissioning, dismantling, and/or future use. One of the primary focuses of the Site is the performance of risk reduction activities including the preparation of nuclear materials for interim storage, liquid residue stabilization, and the elimination and mitigation of Site hazards. Also among the Site's planning activities are the identification and establishment of interim storage facilities.

## 5.2 Accountability

As the IMC, Kaiser-Hill has overall responsibility for the Site and for QA at the Site Kaiser-Hill requires nuclear activities to be conducted in accordance with 10 CFR 830 120 and non-nuclear activities to be conducted in accordance with DOE Order 5700 6C Activities with the potential to cause radiological harm are covered by 10 CFR 830 120

Quality Assurance is a shared interdisciplinary function. It involves management and individual contributors of all organizations responsible for producing items, performing activities and services, and independently verifying that items, activities, and services comply with specified standards and requirements

Each individual is responsible for the quality of their work, for reducing costs, for identifying nonconforming items, and for complying with requirements and procedures. Individuals who are responsible for producing an item or performing an activity, and their immediate management, have direct and final responsibility for the quality of the item, activity, or service. They are responsible for reviewing item reliability, process implementation, and other quality-related information and analyzing data to identify items and processes needing improvement.

Individuals or organizations assigned responsibility for the quality function and for verifying that activities affecting quality have been correctly performed have sufficient authority, access to work areas, and organizational freedom to

- identify quality problems and initiate, recommend, or provide solutions to resolve identified problems,
- verify implementation of solutions.
- verify that nonconforming conditions are dispositioned in accordance with approved procedures, and
- directly access levels of management required to resolve identified problems

## 5.3 Document Hierarchy

Figure 1 provides an overview of the Site Quality Document Hierarchy It applies to the Kaiser-Hill Team and lower-tier contractors

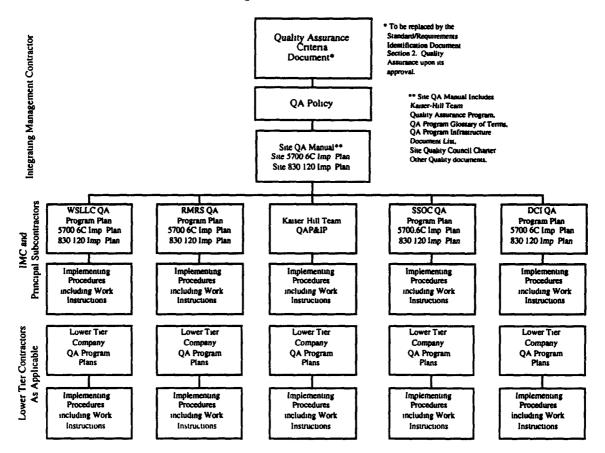
The Quality Assurance Program Criteria document contains the current Kaiser-Hill Team QA requirements

The quality management philosophy of the IMC is expressed in the QA Policy The QA Policy establishes the IMC commitment to ensure that QA requirements are addressed and risks and environmental impacts are minimized, while safety, security, reliability, and performance are maximized

The Site Quality Assurance Manual contains the following

- Quality Assurance Program Mission and Vision
- Kaiser-Hill Team Quality Assurance Program
- Quality Assurance Program Glossary of Terms The Glossary applies to documents developed to standardize the Kaiser-Hill Team QAP and its implementation. In case of conflict between the definitions contained in the Glossary of Terms and those contained in other Site documents, the definitions in the Glossary of Terms take precedence where pertaining to quality and the Kaiser-Hill Team QAP
- Quality Assurance Program Infrastructure Document List A list of the Site level infrastructure documents that implement the QA requirements
- Site Quality Council Charter The multicontractor Site Quality Council provides a mechanism for interaction between the IMC and the Principal

Subcontractors on quality matters The Site Quality Council provides guidance and direction for the development and implementation of the Kaiser-Hill Team QAP



# Figure 1 Site Quality Document Hierarchy

The company-specific QAPPs and Implementation Plans describe how each company will comply with the Kaiser-Hill Team QAP to accomplish its own specific mission

Based on company-specific input, the IMC developed the Kaiser-Hill Team Quality Assurance 10 CFR 830 120 Implementation Plan Corrective actions that are identified in the Implementation Plan will be tracked. The IMC will monitor progress against stated Implementation Plan deliverables, and keep the DOE apprised of both progress and problems. The Implementation Plan will be reviewed and updated as appropriate.

The Principal Subcontractors and the IMC are responsible for adhering to the Site infrastructure programs and procedures and for the development and implementation of company-specific procedures as needed for accomplishment

of individual company-specific activities Company-specific work instructions necessary for the accomplishment of the individual missions of the IMC and the Principal Subcontractors can be found in their company-specific procedures

## 5.4 <u>Applicability of Quality Assurance Requirements to Site Nuclear</u> Facilities

NOTE The list of hazard category 2 and 3 facilities as defined in DOE Order 5480 23, Nuclear Safety Analysis Reports, and the description of the Master Activities List are provided to describe the primary areas to which 10 CFR 830 120 will apply Applicability of 10 CFR 830 120 is not limited to hazard category 2 and 3 facilities The Rule is applicable to activities that have the potential for causing radiological harm regardless of where they occur

Title 10 CFR 830 120 applies to nuclear facilities and to activities with the potential to cause radiological harm. The following are designated nuclear facilities as identified in the Rocky Flats Site Safety Analysis Report (SAR) Project Phase 1 Summary Report, Facilities Hazards Assessment and Classification, NSTR-016-94, Revision 2, September 29, 1995. The list of nuclear facilities is subject to change as risk assessments are accomplished Kaiser-Hill Nuclear Engineering maintains an up-to-date listing of the Site nuclear facilities.

Category 2 Nuclear Facilities Buildings		Category 3 Nuclear Facilities Buildings		
371	374	444	Ŭ 447	
440	559	448	450	
569	664	451	455	
707	771	750 / 904 Pads	879	
774	776 / 777	881	881F	
779	886	883	884	
991		906	964	
		OU2 / 903 Pad	RCRA Unit 15A	

On February 27, 1996, Kaiser-Hill and DOE, Rocky Flats Field Office signed an Authorization Agreement (Agreement) to establish and maintain the Authorization Bases for activities at the Site as listed in the Master Activity List (MAL) The Agreement will be incorporated into the DOE contract with Kaiser-Hill for the operation of the Site

The MAL contains a list of currently identified work activities which are either (1) a baseline activity necessary for performance due to the presence of hazards, (2) a mission program activity authorized for performance, (3) a mission program activity authorized for planning only, or (4) a currently unauthorized mission program activity. The MAL contains the list of currently approved nuclear activities, however, not every listed activity is a nuclear activity. The MAL is a living document and will be updated as needed

Site functions such as Human Resource Development, Financial Management, Benefits Administration, Food Service, Employee Assistance Program, and other functions required as a part of the conduct of business do not meet the definition of an activity Therefore, these functions are not included in the MAL

## 5.5 Graded Approach

Graded approach is the process by which the levels of analysis, documentation, and other actions necessary to implement the QA requirements are based on facility/activity specific factors

The QA Rule (10 CFR 830 120) and DOE Order 5700 6C are applied to the Site through the use of graded approach. In order to ensure the most efficient use of resources, graded approach is used to determine the rigor with which the QA requirements are applied to a specific facility or activity. This approach provides the flexibility to implement the programs in a way that best suits the facility or activity while maintaining full compliance with the QA Rule and DOE Order 5700 6C.

The facilities at Rocky Flats are identified as hazard category 2 or 3 facilities, radiological facilities, or other facilities. There are no hazard category 1 facilities at the Site. Structures, systems, and components important to safety are identified in the facility Safety Analysis Report (SAR) and in other authorization basis documents. Because the SARs were written when the facilities were operational, they may reflect the need for more stringent safety requirements and operational needs. They may represent an over commitment for what is needed for an end-of-life facility that will be decontaminated and decommissioned. As new authorization basis documents are prepared using the DOE closure process for necessary and sufficient sets of standards, they will adequately reflect the requirements appropriate for the current Site mission. The DOE closure process for necessary and sufficient sets of standards is one method of applying graded approach.

Consistent with DOE STD-1082-94, Preparation, Review, and Approval of Implementation Plans for Nuclear Safety Requirements, the Kaiser-Hill Team organization responsible for a nuclear safety requirement has been empowered to use its best judgement in the determination of the appropriate graded approach to be used to achieve full implementation of the requirement. This judgment is based on detailed knowledge of the specific requirements, features, resources, needs, goals, and interface with other organizations and facilities The graded approach utilized to comply with a QA requirement was developed by application of the best judgements of a group of experts who have collectively broad knowledge of the applicable facilities and activities, of the safety management program for applicable facilities and activities, and of the collective wisdom behind the established regulatory requirements as defined in regulations and amplified by related technical standards and guides Each level 1 procedure implementing a Site infrastructure program, (QA requirements) or a part thereof, has provided in the instructions section, as appropriate, the level of analysis, documentation, and actions necessary to comply with the QA requirements based on a graded approach

Additionally, procedures and other documents which implement Site infrastructure programs with direct impact on work and work processes receive independent review under the existing Site infrastructure. This independent review utilizes an interdisciplinary technical evaluation process to evaluate safety issues and (implicitly) quality aspects. Further, work-level instructions, procedures, and other instruments of work control developed under the Site infrastructure programs receive independent review (primarily Operations Review Committees) as a verification of the implementation of safety and program (including quality) requirements, where the work to be performed meets threshold risk requirements. This process as a whole validates the grading and application of QA requirements.

The following general criteria are guiding principles in the application of graded approach by the Kaiser-Hill Team

- Graded approach may not be used to exempt a process, item, activity, or program from meeting requirements, nor to avoid compliance with federal, state, and local regulations
- The higher the risk, the more rigor is required to ensure that requirements are met
- Site facilities and activities are graded as either nuclear or non-nuclear facilities or activities
- The program owner organization, because it has detailed knowledge of processes, items, activities, and programs, uses best judgment in determining the rigor of requirement implementation, administrative controls, and business practices to be applied to ensure requirements are met
- Implementing procedures and work plans reflect the use of the graded approach by setting forth direction for the amount of analysis, documentation, and actions required to ensure requirements are met

Graded approach has been implemented to meet the QA requirements considering and using individually, or in combination, the following criteria

- The relative importance to safety, safeguards, and security The relative importance of an activity or item to safety, security, safeguards, environment, or mission provides the basis for establishing the order of completion or the depth, rigor, and thoroughness in applying the requirement (For example the corrective action process provides for grading deficiencies and other action items by significance level [0 to 11] The higher the number, the greater the significance Corrective actions are scheduled and accomplished based, in part, on significance)
- The magnitude of any hazard involved Consideration of the risks and hazards of the facility allows the implementing organization to focus resources on the activities most likely to reduce the associated risks and

hazards by tailoring the implementing actions to the specific risks and hazards at the individual facilities and activities (For example activities to stabilize Plutonium were given high priority in the Accelerated Site Action Project, the Site strategic plan, in order to reduce the hazardous condition)

- The life cycle stage of a facility The consideration of the life cycle stage of a facility permits the implementing organization to assess the appropriate application for the current life cycle stage of the facility (For example A facility that has the source material removed, and that is scheduled for decontamination and decommissioning, should have fewer requirements than a plutonium storage facility)
- The programmatic mission of a facility The programmatic mission of a facility, including passive missions such as contamination confinement and material storage, may dictate the degree of gradation for the implementation of a requirement (For example an operating facility that processes plutonium should have more rigorous and a larger number of requirements than a material storage facility)
- The particular characteristics of a facility The particular characteristics of a facility influence how nuclear safety requirements are applied (For example A waste storage facility should have fewer requirements than a plutonium facility performing stabilization activities)
- Any other relevent factor One such factor might be phased implementation
  of a requirement (by time or by facility) Phased implementation minimizes
  the impact on resources and allows for a learning curve (For example the
  procedure preparation process is being phased in over time to minimize the
  impact on resources)

Graded approach has been utilized during the development of the Site infrastructure programs and implementing procedures. Appendix 1, Graded Approach To The Requirements of 10 CFR 830 120, describes how graded approach is applied to each of the ten criteria of the QA Rule.

Appendix 2, Matrix of CCCP/COEM Systems Categories to DOE Orders and Standards Classification Schemes and to Graded Infrastructure, shows the relationship between DOE Order 5480 23, DOE Order 5481 1B, DOE Order 6430 1A, DOE-STD-1021-93, DOE-STD-1027-92, DOE-STD-3009-94, current and proposed system categories, procurement levels, and significance levels from other infrastructure programs and procedures

#### 6.0 ORGANIZATIONAL ROLES AND RESPONSIBILITIES

## 6.1 Organization

The Site organizational structure, functional responsibilities, lines of authority, and interfaces are shown in Figure 2, Kaiser-Hill Team Organization Further details of the organizational structure will be found in the Site Organization

Manual, which is currently under development, and can be obtained through Kaiser-Hill Human Resources

The functions, objectives, and goals of Kaiser-Hill as the IMC are carried out by the following organizational units Finance and Administration, Safety Engineering and Technical Services, Site Operations and Integration, Environmental Restoration/Waste Management and Integration, Special Material Management and Integration, Human Resources, Communications, and Economic Conversion, Health and Safety, Performance Assurance, Planning and Integration, and General Counsel

Work is performed by multiple contractors. The four major direct subcontractors are known as Principal Subcontractors. Each of the Principal Subcontractors report to one of the IMC's organizational units. In addition, several lower-tier contractors provide support to the IMC and/or the Principal Subcontractors.

The interfaces and interactions between the IMC and the Principal Subcontractors are established in their respective subcontracts

## 6.2 Roles

The following is a brief discussion of the roles of the IMC and Principal Subcontractors in accomplishing the mission of the Site Kaiser-Hill as the IMC has overall responsibility for Site activities and is accountable to the DOE for the safe performance of work

Rocky Mountain Remediation Services, L L C (RMRS), as a subcontractor to Kaiser-Hill, is responsible for the waste management, environmental remediation, and decontamination and decommissioning activities at the Site

Safe Sites of Colorado (SSOC), as a subcontractor to Kaiser-Hill, is responsible for the reduction of plutonium and residue vulnerabilities and deactivation of special nuclear materials facilities

DynCorp of Colorado, Inc (DCI), as a subcontractor to Kaiser-Hill, provides Site support services including occurrence reporting, fire and emergency services, management of emergency preparedness, occupational medicine, receiving inspection, and document and record control

Wackenhut Services, L L C (WSLLC), as a subcontractor to Kaiser-Hill, provides Site protective forces and other security related services

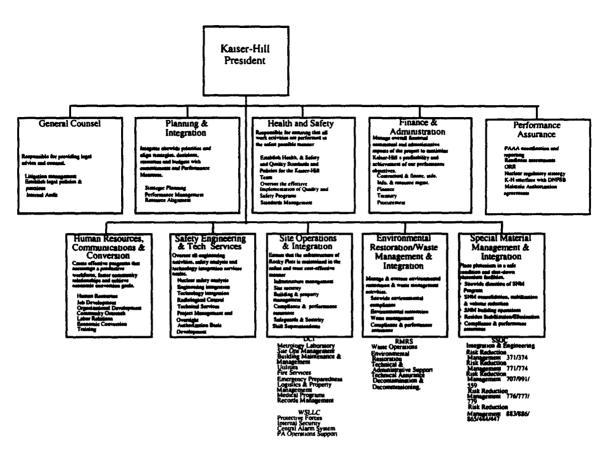


Figure 2

Kaiser-Hill Team Organization

## 6.3 Responsibilities

The principal responsibilities for individuals and organizations implementing the Kaiser-Hill Team QAP are as follows

## 6.3.1 The Kaiser-Hill President is responsible for

- Approving overall policy and management direction for the Kaiser-Hill Team QAP
- Approving allocation of resources to implement QA requirements

## 6.3.2 All Kaiser-Hill Vice Presidents are responsible for

- Providing resources for their organizations necessary to implement the QA requirements, as applicable
- Incorporating applicable QA requirements into documents that govern work, activities, and the procurement of items and services
- Communicating applicable QA requirements to Principal Subcontractors and lower-tier contractors, as appropriate
- Providing integration, coordination, and oversight (management assessments) of activities under their purview including those performed by subcontractors

- Taking timely corrective action for identified quality problems
- Initiating the stop work process when appropriate
- 6.3.3 In addition to the responsibilities stated in 6 3 2, the Kaiser-Hill Vice President, Health and Safety is responsible for
  - Establishing direction and guidance for defining, implementing, and maintaining the Site Quality Assurance infrastructure including the Kaiser-Hill Team OAP
  - Resolving QA related problems not resolved at lower or peer organization level
  - Developing and maintaining the Site Commitments Management and Corrective Actions Process, the Management Assessment Program, and the Independent Assessment Program
- 6.3.4 In addition to the responsibilities stated in 6 3 2, the Kaiser-Hill Vice President, Finance and Administration is responsible for
  - Establishing a sitewide procurement process and appropriate procedures and instructions to meet QA requirements for the procurement of commodities, items, and services
  - Evaluating the adequacy of controls established to meet QA requirements applicable to business services and finance, and ensuring effective implementation
- 6.3.5 In addition to the responsibilities stated in 6 3 2, the Kaiser-Hill Vice President, Human Resources, Communications, and Economic Conversion is responsible for
  - Maintaining the manual containing Site organizational charts, functional responsibilities, and levels of authority for both the IMC and the Principal Subcontractors
  - Developing and maintaining the Site training program and overseeing the Principal Subcontractor training programs
  - Assisting Site organizations in the application of organizational development concepts including quality improvement methodologies to achieve their goals
- 6.3.6 In addition to the responsibilities listed in 6.3.2, the Kaiser-Hill Vice President, Safety Engineering and Technical Services is responsible for
  - Establishing Site infrastructure programs that control the design process
  - Establishing and maintaining the functions of the Site Chief Engineer
  - Providing Engineering Documentation Services
  - Developing and maintaining the Authorization Basis process
- 6.3.7 In addition to the responsibilities listed in 6 3 2, the Kaiser-Hill Acting Director, Planning and Integration is responsible for
  - Developing and maintaining systems and processes to integrate Site -priorities and align strategies, decisions, resources, and budgets with
    goals, commitments, and performance measures

- 6.3.8 In addition to the responsibilities stated in 6.3.2, the Kaiser-Hill Vice President, Site Operations and Integration is responsible for
  - Serving as the Kaiser-Hill contract technical representative for the contracts with DCI and WSLLC
  - Managing Shift Superintendent responsibilities
- 6.3.9 In addition to the responsibilities stated in 6 3 2, the Kaiser-Hill Vice President, Environmental Restoration/Waste Management and Integration is responsible for
  - Serving as the Kaiser-Hill contract technical representative for the contract with RMRS
- 6.3.10 In addition to the responsibilities stated in 6 3 2, the Kaiser-Hill Vice President, Special Material Management and Integration is responsible for
  - Serving as the Kaiser-Hill contract technical representative for the contract with SSOC
- 6.3.11 In addition to the responsibilities stated in 6 3 2, The Kaiser-Hill, Vice President, Performance Assurance is responsible for
  - Developing and maintaining the program for reporting noncompliance with the Price-Anderson Amendments Act
  - Direct readiness assessments and operational readiness reviews
  - Maintain authorization agreements
- 6.3.12 The Site Quality Council Chair, under the Vice President, Health and Safety is responsible for
  - Identifying, documenting, and maintaining the OA requirements
  - Developing, preparing, and maintaining the Kaiser-Hill Team QAP to meet the requirements of 10 CFR 830 120 and DOE Order 5700 6C
  - Developing, coordinating, approving, and maintaining the Site QA Manual
  - Establishing, in coordination with the responsible implementing organizations, controls to ensure that conditions which are not in compliance with the QA requirements are identified and promptly corrected
  - Providing Kaiser-Hill assistance, indoctrination, and training in QA practices, procedures, and regulations
  - Serving as the Site interface with the DOE, RFFO quality organization on quality-related matters
- 6.3.13 The Kaiser-Hill Director, Performance Oversight, under the Vice President, Health and Safety is responsible for
  - Performing independent assessment activities for the Site
  - Providing documented results of independent assessment activities to Site management
  - Providing independent oversight of proposed corrective action plans for certain significant deficiencies
  - Verifying selected completed corrective actions for Site and external oversight identified deficiencies

- Implementing, in conjunction with other organizations, a centralized supplier evaluation/audit program for procurements of commodities and services
- Providing Site waste certification and acceptance for purposes of onsite and radioactive offsite waste disposal
- Interfacing with Site waste generators, operations, and support staff on waste certification issues
- Interfacing with waste receiving sites on certification and waste issues
- **6.3.14** Principal Subcontractors are responsible for
  - Providing resources to implement the Site and company-specific QA requirements, as applicable
  - Implementing Site infrastructure programs and procedures, as applicable
  - Providing resources for the development and maintenance (when infrastructure procedures do not exist) of procedures and instructions to accomplish of their company-specific missions
  - Communicating QA requirements to lower-tier contractors and suppliers and approving the QAPPs of their lower-tier contractors, when applicable
  - Providing company-specific organizational charts, functional responsibilities, levels of authority and updating as necessary
  - Performing management assessments of their respective quality related activities and reporting results to management
  - Tracking and providing timely corrective action for identified quality problems
  - Initiating the stop work process when appropriate
  - Reviewing quality data to determine measures to strengthen performance
  - Facilitating the resolution of quality-related problems
- 6.3.15 In addition to the responsibilities listed in 6 3 14, DynCorp of Colorado, Inc is also responsible for:
  - Providing Document Control and Records Management Programs and services for the Site
  - Providing receipt-inspections for procured items for the Site, as applicable
  - Providing field inspection for Site maintenance and construction activities, as applicable
  - Providing engineering (design) services for DCI that meet design requirements and which are consistent with Site infrastructure programs, as established by the Site Chief Engineer
- 6.3.16 In addition to the responsibilities listed in 6 3 14, Safe Sites of Colorado is also responsible for:
  - Implementing the Criticality Safety Program across the Site
  - Providing engineering (design) services for SSOC that meet design requirements and which are consistent with Site infrastructure programs, as established by the Site Chief Engineer

- 6.3.17 In addition to the responsibilities listed in 6 3 14, Rocky Mountain Remediation Services, L L C is also responsible for:
  - Providing engineering (design) services for RMRS that meet design requirements and which are consistent with Site infrastructure programs, as established by the Site Chief Engineer
- 6.3.18 In addition to the responsibilities listed in 6 3 14, Wackenhut Services, L L C is also responsible for:
  - Providing security services for the Site

## 7.0 SITE QUALITY ASSURANCE PROGRAM

The remainder of this document is divided into three subsections which correspond to the criteria of 10 CFR 830 120(c) and DOE Order 5700 6C

Section 5 of the Quality Assurance Program Manual, Quality Assurance Program Infrastructure Document List, contains a list of the Site Level implementing documents for each of the criteria

## 7.1 Management

## 7.1.1 Criterion 1, Program

## 7.1.1.1 Requirements

10 CFR 830 120 (c) (1) (1) for Nuclear Facilities/Activities
"A written quality assurance program (QAP) shall be developed, implemented, and maintained The QAP shall describe the organizational structure, functional responsibilities, levels of authority and interfaces for those managing, performing, and assessing the work The QAP shall describe management processes, including planning, scheduling, and resource considerations"

DOE Order 5700 6C, 9 b (1)(a) for Non-Nuclear Activities "Organizations shall develop, implement, and maintain a written Quality Assurance Program (QAP) The QAP shall describe the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing adequacy of work The QAP shall describe the management system, including planning, scheduling, and cost control considerations"

## 7.1.1.2 Discussion

The Site Quality Assurance Manual, which contains the Kaiser-Hill Team QAP, is developed, implemented, maintained, and approved by the IMC Each Principal Subcontractor will perform work to the QA requirements

The Kaiser-Hill Team QAP is consistent with DOE G-830 120-Rev 0, Implementation Guide for use with 10 CFR 830 120 Quality Assurance

The individual company-specific QAPPs of the Principal Subcontractors (or the Kaiser-Hill Team QAP) will apply to their subcontracted work, whether performed by the Principal Subcontractor or a lower-tier contractor. The lower-tier contractor may work to the QAPP of the Principal Subcontractor (or the Kaiser-Hill Team QAP) or they may develop their own QAPP as long as their Plan is consistent with the QAPP and has been approved by the responsible Principal Subcontractor.

The Kaiser-Hill Team has prepared an Accelerated Site Action Project (ASAP) strategic plan (also titled Choices for Rocky Flats) to radically decrease the Site risks and increase land availability as compared to the Site's past course of action. This strategic plan provides a number of alternatives for moving forward. While the alternatives are being evaluated through the National Environmental Policy Act and the decision process is ongoing, the Site is proceeding with short-term plans that focus on reducing Site risks and operating costs.

The Kaiser-Hill Team in cooperation with DOE RFFO is developing a ten year plan to complete cleanup of the Site within ten years or less. The plan will build on the recent work done in developing the ASAP/Rocky Flats Cleanup Agreement compliance case, ASAP Phase 2, Workout III, and the fiscal year 1997 budget. The ten year plan will bring all of the above activities under a single umbrella with estimates sufficient for ASAP Phase 3. When the ten year plan is developed and approved, short-term plans will be adjusted as necessary to fit the ten year plan.

The Kaiser-Hill Team follows the defined DOE budgeting process for funding current fiscal year work and for planning work for future fiscal years Currently authorized work is identified on the Master Activity List and in approved budget work packages

The Kaiser-Hill Team QAP describes the processes by which organizations perform work activities which meet QA requirements. The Site infrastructure provides for the development of program documents and procedures needed to satisfy the requirements of rules, regulations, and DOE Orders which are applicable to Site activities. The Site basic organizational structure, functional responsibilities, lines of authorities, and interfaces are described in Section 6 of this document, Organizational Roles and Responsibilities. Policies applicable to the IMC and Principal Subcontractors are found in the Policy Manual, and are developed and maintained in accordance with the Policy Program.

An example of the Site work planning, authorization, and implementation process is shown in Figure 3, Work Planning/Authorization/Implementation

The document hierarchy which includes the QAP is described in Section 5 3, Document Hierarchy, and illustrated in Figure 1, Site Quality Document Hierarchy

Implementation of QA requirements is accomplished through the establishment of policies, programs, procedures, and work instructions. Procedures that implement the activities are written, reviewed, and approved to satisfy the

criteria according to the risk(s), hazard(s), and/or consequence(s) identified A list of Site level infrastructure documents which implement the Site QA requirements is found in the QA Manual Records generated by procedural adherence are identified within each approved procedure

Quality is achieved by the individuals who are responsible for producing an item or performing an activity. Quality may be measured by acceptance criteria, technical evaluations, inspections, management assessments, and independent assessments.

Deficiencies and nonconformances are documented and, based on their significance, corrective actions are formulated, documented, implemented, and selectively verified to prevent recurrence Significance criteria are established in the Site Commitments Management and Corrective Actions Process

Additional documents, or applicable portions, that are used or may be used to implement QA requirements include the Accelerated Site Action Project plan (Choices for Rocky Flats), the Kaiser-Hill Environmental, Safety & Health Management & Implementation Plan, procedure 1-50000-ADM-05 01, Document Hierarchy Definition and Administration, 1-S27-ADM-02 28, Price-Anderson Amendments Act Process, 1-40ADM-MCS-1001, Management Control System, 1-40ADM-MCS-1002, Work Package Development and Documentation, 1-R32-ADM-02 38, Activity Definition Process, the Master Activity List Authorization Agreement, and the Master Activity List

## 7.1.2 Criterion 2, Personnel Training and Qualification

## 7.1.2.1 Requirements

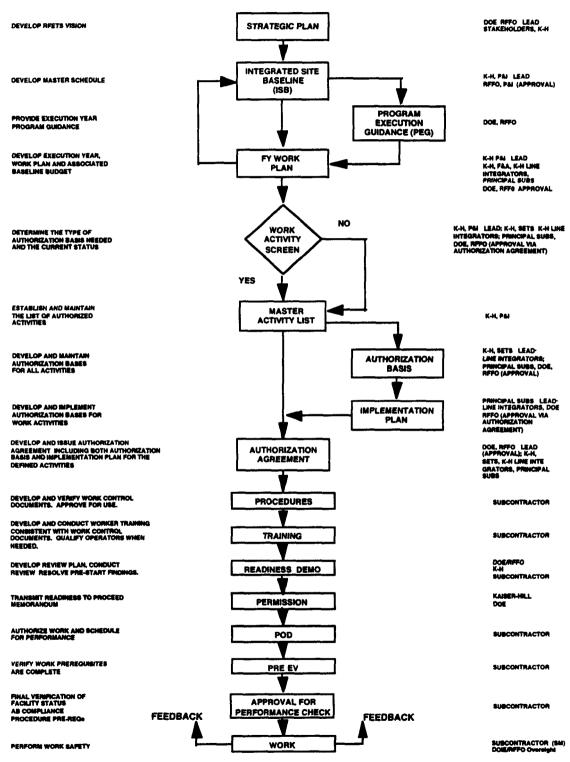
10 CFR 830 120 (c) (1) (ii) for Nuclear Facilities/Activities "Personnel shall be trained and qualified to ensure they are capable of performing their assigned work Personnel shall be provided continuing training to ensure that job proficiency is maintained"

DOE Order 5700 6C, 9 b (1)(b) for Non-Nuclear Activities "Personnel shall be trained and qualified to ensure they are capable of performing their assigned work Personnel shall be provided continuing training to ensure that job proficiency is maintained"

#### 7.1.2.2 Discussion

Training programs, including initial training, are designed to qualify and train personnel responsible for managing, developing, performing, and assessing work activities. Continuing training is provided to ensure job proficiency is maintained.

Figure 3
WORK PLANNING/AUTHORIZATION/IMPLEMENTATION



The qualification and training process is designed to enable management to determine and document job-specific and general training requirements for their employees. Training methods include formal training conducted by qualified instructors, briefings conducted by management approved personnel, required readings, workshops, seminars, and awareness training. Implementation requirements and responsibilities for personnel training and qualification are documented.

The training and qualification process is applied using a graded approach. For example, training of maintenance crafts will be focused on safety and other regulatory required training (e.g. Occupational Safety and Health Administration requirements). Other maintenance training and qualification will be limited to maintaining craft job proficiency at the journeyman level.

## 7.1.2.3 Implementation Documents

The Training User's Manual (TUM) implements the requirements of DOE Order 5480 20, Personnel Selection, Qualification, and Training Requirements at DOE Nuclear Facilities The TUM references the Site organization, and the planning and administration of the qualification/certification program, and sets forth the responsibilities, authorities, and methods for conducting training The Training Implementation Matrix documents compliance to DOE Order 5480 20 for each nuclear facility

The training program includes general employee training which covers general requirements applicable to common elements of employees' work assignments. Personnel may also be required to complete area-specific training, based on their specific work area, building assignments, and access needs

A matrix for line management to determine the general training requirements for each individual is available electronically. Employees may also be required to complete job-specific training in the unique aspects of individual jobs. Continuing training programs are designed and implemented to maintain and enhance job proficiency identified in the certification/qualification program.

## 7.1.3 Criterion 3, Quality Improvement

#### 7.1.3.1 Requirements

10 CFR 830 120 (c)(1)(111) for Nuclear Facilities/Activities "Processes to detect and prevent quality problems shall be established and implemented Items, services, and processes that do not meet established requirements shall be identified, controlled, and corrected according to the importance of the problem and the work affected. Correction shall include identifying the causes of problems and working to prevent recurrence. Item characteristics, process implementation, and other quality-related information shall be reviewed and the data analyzed to identify items, services, and processes needing improvement."

DOE Order 5700 6C, 9 b (1)(c) for Non-Nuclear Activities "The organization shall establish and implement processes to detect and prevent quality problems and to ensure quality improvement. Items and processes that do not meet established requirements shall be identified, controlled, and corrected. Correction shall include identifying the causes of problems and preventing recurrence. Item reliability, process implementation, and other quality-related information shall be reviewed and the data analyzed to identify items and processes needing improvement."

#### 7.1.3.2 Discussion

Infrastructure programs have been established and implemented to detect, prevent, and correct quality related problems

Those items and activities that do not meet established criteria and/or predetermined quality requirements are identified, documented, analyzed, dispositioned, corrected, and selectively verified in accordance with the Site nonconforming items process. Nonconforming items are controlled to prevent inadvertent installation, testing, or use. Based upon the importance to safety and the significance of the identified problem, causal factors are evaluated to establish the cause.

The occurrence reporting process establishes reporting requirements, followup corrective actions, root cause analysis, and tracking of Site occurrences. The the Commitments Management and Corrective Actions Process establishes the responsibilities and instructions for deficiency reporting and corrective action systems and procedures to ensure that unclassified deficiencies are documented, analyzed, evaluated for significance, and prioritized for corrective action.

Significance is determined based on potential impact to operations, safety, security, reliability, performance, regulatory compliance, and the environment

Independent verifications and follow-up activities are performed on selected corrective actions depending, in part, upon the significance of the identified deficiency. When conditions require immediate cessation of activities, the stop work process is initiated.

Management assessments provide a consistent approach for management to evaluate compliance with requirements and commitments, measure effectiveness of established processes, identify and correct deficient conditions and work practices, and to implement needed improvements. Item characteristics, process implementation, and other quality-related information and data will be reviewed and the data analyzed to identify items, services, and processes needing improvement based upon a graded approach. Trending of maintenance history data will be accomplished for specific buildings and equipment based upon a graded approach. The Cause Analysis process is established to determine the root and contributing causes of events and conditions, and the associated corrective actions, that if implemented, will prevent recurrence. The rigor of cause analysis is based on the significance of the issue

The Lessons Learned Program is established to collect, evaluate, and distribute experience information related to concerns, deficiencies, occurrences, findings, defects, weaknesses, or other information with generic implications

## 7.1.3.3 Implementation Documents

The quality improvement process is described and implemented, in part and as applicable, by several procedures Procedure 1-P04-CMCAP-16 00, Commitments Management and Corrective Actions Process, establishes the process and responsibilities for identification, documentation, characterization, categorization, and significance screening of deficiencies, management directives, and Site improvements

Procedure 1-A65-ADM-15 01, Control of Nonconforming Items, establishes the process and responsibilities for identifying, controlling, resolving, modifying, evaluating, dispositioning, and verifying completed corrective actions for nonconforming items associated with non weapons applications Weapons related nonconformances are processed in accordance with 1-50000-ADM-15 04, Quality Disposition Record The Waste organization uses procedure 2-U76-WC-4030, Control of Waste Nonconformances, for identifying, controlling, resolving, evaluating, providing dispositions, and verifying completed corrective actions for nonconforming waste items and packages at the Site

Deficiencies identified as Industrial Hygiene and Safety hazards are reported and administered in accordance with the Health and Safety Practices Manual, 1-E35-HSP-1 06, Hazards and Deficiencies Abatement Management Process

Other procedures or applicable portions, that are used to identify and implement improvements are 1-V10-ADM-15 02, Stop Work Action, 1-11000-ADM-16 03, Cause Analysis, 1-C78-ADM-16 05, Lessons Learned Process, 1-D97-ADM-16 01, Occurrence Reporting Process, 1-E93-ADM-16 18, Performance Indication and Trend Analysis, 1-Q05-ADM-02.26, Standards Identification, Assessment, and Noncompliance, and 1-P45-MA-001, Management Assessment Program and Management Assessment Implementation Guide

## 7.1.4 Criterion 4, Documents and Records

### 7.1.4.1 Requirements

10 CFR 830 120 (c)(1)(1v) for Nuclear Facilities/Activities "Documents shall be prepared, reviewed, approved, issued, used, and revised to prescribe processes, specify requirements, or establish design Records shall be specified, prepared, reviewed, approved, and maintained"

DOE Order 5700 6C, 9 b (1)(d) for Non-Nuclear Activities "Documents shall be prepared, reviewed, approved, issued, used, and revised to prescribe processes, specify requirements, or establish design Records shall be specified, prepared, reviewed, approved, and maintained"

## 7.1.4.2 Discussion

The Site Document Control and Records Management Programs are provided by DCI with oversight by the IMC Engineering Document Control is provided by the IMC Principal Subcontractors are responsible for assuring adherence to the Site Document Control and Records Management Programs through their company-specific QAPPs

The Site Document Control Program is designed such that Site documents to prescribe processes, specify requirements, or establish design are prepared, reviewed, approved, issued, and controlled for use by personnel managing or performing work. Controlled documents are distributed to the user in a manner to ensure the use of the latest revision, controlled to ensure that obsolete and superseded documents are stamped, destroyed, or recalled to prevent their inadvertent use, routinely verified to ensure controlled status, and maintained by indices.

A Records Management Program has been established to ensure that Site records providing evidence of quality are specified, prepared, reviewed, approved, authenticated, legible, transferred, collected, maintained, stored, retained to identified retention periods, and indexed for accountability and retrievability. The scope of records to be retained is normally identified by line management within the procedure that generates the record. The Records Management organization provides assistance to Site organizations in the determination of records and appropriate retention schedules.

Computer hardware and software that are used to store, maintain, index, and access records are controlled to ensure records protection from loss or damage, and to ensure accountability and retrievability

### 7.1.4.3 Implementation Documents

Correspondence is controlled in accordance with procedure 1-11000-ADM-003, Correspondence Control Program, and the Correspondence Manual Documents are reviewed for appropriate technical content and accuracy Manuals and procedures are distributed and controlled in accordance with procedure 1-77000-DC-001, Document Control Program Records generated by the Kaiser-Hill Team are controlled in accordance with procedure 1-77000-RM-001, Records Management Guidance for Records Sources The procedure establishes the requirements and responsibilities of Site records sources for the identification, generation, correction, authentication, protection, and turnover of records, regardless of media type, to the Site Records Management organization

## 7.2 **Performance**

## 7.2.1 Criterion 5, Work Processes

## 7.2.1.1 Requirements

10 CFR 830 120 (c)(2)(1) for Nuclear Facilities/Activities

"Work shall be performed to established technical standards and administrative controls using approved instructions, procedures, or other appropriate means Items shall be identified and controlled to ensure their proper use Items shall be maintained to prevent their damage, loss, or deterioration Equipment used for process monitoring or data collection shall be calibrated and maintained"

DOE Order 5700 6, 9 b (2)(a) for Non-Nuclear Activities

"Work shall be performed to established technical standards and administrative controls. Work shall be performed under controlled conditions using approved instructions, procedures, or other appropriate means. Items shall be identified and controlled to ensure their proper use. Items shall be maintained to prevent their damage, loss, or deterioration. Equipment used for process monitoring or data collection shall be calibrated and maintained."

#### 7.2.1.2 Discussion

Work processes and activities including special processes, are performed as permitted by established Site infrastructure programs and procedures, including Activity Based Management

Controls for work processes affecting quality are established by the generation of instructions, procedures, drawings, training requirements, and other approved means Proceduralized infrastructure programs and process control systems have been established to assure standardized and consistent achievement of requirements, goals, and objectives

Individual employees and line management are responsible for the achievement of quality. Line managers ensure that activities affecting quality are controlled by approved procedures or other appropriate means

The extent of the controls applied to the work is commensurate with the scope, complexity, and risk associated with the assigned task. Corrective, preventive, and predictive maintenance will be accomplished for specific equipment based upon a graded approach. Not all items will be maintained to prevent damage and deterioration. Equipment used for monitoring or data collection is calibrated and maintained. Line management observes work performed, reviews work documentation, conducts management assessments, and ensures documentation and correction of deficiencies and nonconformances. Activities affecting quality are controlled through approved documents.

The Site Measuring and Test Equipment (M&TE) Program provides controls to calibrate and maintain M&TE. The Metrology organization provides administrative and technical expertise for Site calibration organizations. Metrology also develops requirements for the control of M&TE. Organizations

that are responsible for the M&TE implement requirements for control M&TE includes measuring and testing instruments, standards, reference materials, and auxiliary apparatus that are necessary to perform a measurement in the course of testing, inspection, or calibration

## 7.2.1.3 Implementation Documents

The MAL contains a list of currently identified work activities which are either (1) a baseline activity necessary for performance due to the presence of hazards, (2) a mission program activity authorized for performance, (3) a mission program activity authorized for planning only, or (4) a currently unauthorized mission program activity. The MAL contains the list of currently approved nuclear activities, however, not every listed activity is a nuclear activity.

Activities affecting quality are controlled through approved documents. Policies are controlled through procedure 1-50000-ADM-05 02, Development and Control of Rocky Flats Plant Policies. The Site procedures system provides a documented process for procedure preparation, review, change, revision, and approval. The procedure process is described in procedures covering. Procedure Process, Procedure Writing, and Procedure Edit, Review, and Comment. The Conduct of Engineering Manual and Engineering Drafting Manual provide a documented process for drawing preparation, review, revision, approval, and controlled distribution.

Activity Based Management is implemented through procedure 1-D55-ADM-02 37, Activity Control Envelope Development, and other Activity Based Management procedures

Maintenance work activities are implemented through several procedures including the Integrated Work Control Program Manual, the Nuclear Safety Program, Welding Operations, the Quality Control Manual for the Repair and Alteration of Boilers and Pressure Vessels to the National Board Inspection Code, and the welding programs of each of the Principal Subcontractors Operations work is governed by the procedures found in the Conduct of Operations Manual Radiological work is governed by the Radiological Control Manual Other work is governed by the Waste Management Program, the Nuclear Control and Accountability Process, the Emergency Preparedness Program, the Procurement Program, M&TE procedures, etc

A list of the Site level infrastructure documents which implement the Site QA requirements is found in the Quality Assurance Manual

## 7.2.2 Criterion 6, Design

## 7.2.2.1 Requirements

10 CFR 830 120 (c)(2)(11) for Nuclear Facilities/Activities
"Items and processes shall be designed using sound engineering/scientific
principles and appropriate standards. Design work, including changes, shall
incorporate applicable requirements and design bases. Design interfaces shall
be identified and controlled. The adequacy of design products shall be verified
or validated by individuals or groups other than those who performed the work

Verification and validation work shall be completed before approval and implementation of the design "

DOE Order 5700 6C, 9 b (2)(b) for Non-Nuclear Activities "Items and processes shall be designed using sound engineering/scientific principles and appropriate standards. Design work, including changes, shall incorporate applicable requirements and design bases. Design interfaces shall be identified and controlled. The adequacy of design products shall be verified or validated by individuals or groups other than those who performed the work. Verification and validation work shall be completed before approval and implementation of the design."

### 7.2.2.2 Discussion

Kaiser-Hill provides engineering oversight for the Site Design requirements upon which final design work is based include inputs such as existing design bases, performance requirements, regulatory requirements, codes, standards, environmental considerations, risk, and interfaces with new or existing structures and equipment A systematic engineering approach is utilized

The design program provides controls for design of items and processes using engineering/scientific principles and appropriate standards. Design work includes the identification of the Authorization Basis and consideration of nuclear materials safety. Design work includes incorporation of applicable requirements and design bases, identification and control of design interfaces, and verification and validation of the adequacy of design products by individuals or groups other than those who performed the work. The verification and validation is completed before approval and implementation of the design.

Design control applies to items, facilities, and processes and is documented and implemented through procedures, design packages, and work packages. The Software Management Program requires that design software, including changes, be documented, concurred with, and approved by qualified technical personnel. The requirements for computer testing are documented in software development plans and procedures.

## 7.2.2.3 Implementation Documents

Primary design controls are established, as applicable, within the Conduct of Engineering Manual, the Configuration Change Control Program Manual, the Integrated Work Control Program Manual, procedure 1-45000-CSM-001, Computer Software Management, and procedure 1-91000-NSM, Nuclear Safety Manual The authorization basis process and procedures are being developed

### 7.2.3 Criterion 7, Procurement

## 7.2.3.1 Requirements

10 CFR 830 120 (c)(2)(111) for Nuclear Facilities/Activities
"Procured items and services shall meet established requirements and perform as specified Prospective suppliers shall be evaluated and selected on the basis of specified criteria Processes to ensure that approved suppliers continue to provide acceptable items and services shall be established and implemented"

DOE Order 5700 6C, 9 b (2)(c) for Non-Nuclear Activities "The organizations shall ensure that procured items and services meet established requirements and perform as specified Prospective suppliers shall be evaluated and selected on the basis of specified criteria. The organization shall ensure that approved suppliers can continue to provide acceptable items and services."

#### 7.2.3.2 Discussion

The IMC provides the Site with one common Procurement System for the procurement of commodities, items, and services, however, each of the Principal Subcontractors maintains an individual procurement organization to process specific procurement documents. The Site procurement process provides a planned and controlled approach to procurement activities to ensure procured items and services conform to specified requirements. Procurement documents contain the technical, quality, and acceptance requirements for the procurement of items and services. The procurement process ensures that prospective suppliers are evaluated and selected on the basis of specified criteria.

The procurement process also contains controls for technical, quality, and acceptance requirements to flow down to suppliers and lower-tier contractors Included in this flow down are applicable Price-Anderson Amendments Act requirements. The procurement process provides measures to ensure that approved suppliers continue to provide acceptable items and services.

Procurement specifications for equipment, commodities, and services are developed in accordance with procurement levels as specified in the Conduct of Engineering Manual Changes to procurement specifications are controlled through the Configuration Change Control Program Procurement requisitions in support of work packages are initiated through the Integrated Work Control Program

DCI is responsible for Site receipt, inspection, and certification. Receipt inspection and certification activities for procured items are conducted to verify compliance with the procurement documents. These activities include selected inspections, review of required documentation, selected testing, and ensuring the proper disposition and closure of nonconformance documents.

## 7.2.3.3 Implementation Documents

Procurement requirements are implemented in accordance with the Procurement System Volume I and Volume II and procedure 1-W36-APR-111, Acquisition Procedure for Requisitioning Commodities and Services

## 7.2.4 Criterion 8, Inspection and Acceptance Testing

### 7.2.4.1 Requirements

10 CFR 830 120 (c)(2)(1v) for Nuclear Facilities/Activities
"Inspection and testing of specified items, services, and processes shall be
conducted using established acceptance and performance criteria Equipment
used for inspections and tests shall be calibrated and maintained"

DOE Order 5700 6C, 9 b (2)(d) for Non-Nuclear Activities "Inspection and acceptance testing of specified items and processes shall be conducted using established acceptance and performance criteria Equipment used for inspections and tests shall be calibrated and maintained"

#### 7.2.4.2 Discussion

Site infrastructure programs provide for inspection, testing, and calibration of specified items, services, and processes to demonstrate that items and processes perform as intended. Inspection, testing, and calibration are conducted using established acceptance and performance criteria. Equipment used for inspections and tests is calibrated and maintained. Inspections, testing, and calibration to verify conformance of an item to specified requirements and/or demonstrate satisfactory performance for service will be planned, documented, performed, and evaluated using a graded approach according to risk

Controls are established and provide for documented methods to communicate the status of operations, equipment, and systems to affected personnel. The work package planning process specifies lock-out and tag-out situations and utilizes methods to convey the status of preoperational and post-maintenance activities to promote the safe operation of equipment and systems. A formal return to service process following successful post-maintenance testing is established.

The status of operations is communicated through the Shift Relief and Turnover process, and the status of inspections and tests through Inspection, Test and Operating Status Control Boards strategically located within Site facilities

The Site Measuring and Test Equipment Program and Site Metrology Program are provided by DCI, as well as field inspection support of applicable maintenance/construction work. The Site Metrology Program includes process, inline instruments as well as the standard Measuring and Test Equipment. Controls are provided so that inspection and acceptance testing, identified in the technical documents, is performed and documented as required and in accordance with procedures.

## 7.2.4.3 Implementation Documents

The inspection, testing, and calibration of specified items, services, and processes, including equipment, is controlled through the Conduct of Engineering Manual, the Integrated Work Control Program, and through the Procurement, Metrology, and Control of Measuring and Test Equipment programs Applicable portions of the following documents implement this criterion 1-D23-QAP-10 02, Inspection, 1-31000-COOP-019, Returning Systems and Equipment to Service, 1-V51-COEM-DES-210, Design Process Requirements, and 1-I97-ADM-12 01, Control of Measuring and Test Equipment

## 7.3 Assessments

## 7.3.1 Criterion 9, Management Assessment

### 7.3.1.1 Requirements

10 CFR 830 120 (c)(3)(1) for Nuclear Facilities/Activities
"Managers shall assess their management processes Problems that hinder the organization from achieving its objectives shall be identified and corrected"

DOE Order 5700 6C, 9 b (3)(a) for Non-Nuclear Activities "Management at all levels shall periodically assess the integrated quality assurance program and its performance Problems that hinder the organization from achieving its objectives shall be identified and corrected"

#### 7.3.1.2 Discussion

Management assessment places emphasis on the use of human and material resources to achieve Site goals and objectives. Management assessments include an introspective evaluation to determine if the entire integrated management system effectively focuses on meeting Site and company goals Self-evaluations or self-assessments are one form of management assessment Other forms of management assessment include, but are not limited to, critiques, reviews, walkdowns, and appraisals

The IMC and Principal Subcontractor management retain the overall responsibility for management assessments. Direct participation by managers is essential to assure that effective programs have been established and implemented. Managers conduct assessments of their processes to identify problems which may prevent the organization from achieving its goals and objectives. Problems detected by management assessments are documented and corrected.

## 7.3.1.3 Implementation Documents

Management assessments are conducted by Site organizations in accordance with 1-P45-MA-001, Management Assessment Program and Management Assessment Implementation Guide, and other approved procedures Compliance with DOE Orders and other standards is established and documented in accordance with procedure 1-Q05-ADM-02 26, Standards Identification, Assessment, and Noncompliance Processes

## 7.3.2 Criterion 10, Independent Assessment

## 7.3.2.1 Requirements

10 CFR 830 120 (c)(3)(11) for Nuclear Facilities/Activities
"Independent assessments shall be planned and conducted to measure item and service quality, to measure the adequacy of work performance, and to promote improvement. The group performing independent assessments shall have sufficient authority and freedom from the line to carry out its responsibilities. Persons conducting independent assessments shall be technically qualified and knowledgeable in the areas assessed."

DOE Order 5700 6C, 9 b (3)(b) for Non-Nuclear Activities "Planned and periodic independent assessments shall be conducted to measure item quality and process effectiveness and to promote improvement. The organization performing independent assessments shall have sufficient authority and freedom from the line organization to carry out its responsibilities. Persons conducting independent assessments shall be technically qualified and knowledgeable in the areas assessed."

### 7.3.2.2 Discussion

The IMC is responsible for establishing direction and guidance for the Independent Assessment Program and performing independant assessments Principal Subcontractors may perform independent assessments within their specific company. Independent assessment activities are used to evaluate the performance of work processes with regard to requirements, expectations of the customer, and progress toward achieving the Site mission and goals. Independent assessment activities are conducted to assure the appropriate QA requirements are incorporated into Site work control processes and documents and are included in Site daily activities. Independent assessment activities evaluate floor level compliance with Site infrastructure programs and procedures. Independent assessment activities are documented and reports are provided to appropriate levels of management. Findings are used to evaluate effectiveness of the processes and identify needed improvements. Independent assessment concerns are tracked and follow-up actions taken to verify that corrective action is accomplished as scheduled.

Those performing independent assessment activities have sufficient authority and freedom to carry out their responsibilities. Persons performing independent assessment activities are technically qualified, knowledgeable in the areas assessed, and do not have direct responsibility in the areas assessed.

DOE requires that all contractors and their subcontractors allow access to all facility areas for the purpose of conducting assessment activities. To enhance the performance and efficiency of assessments, all employees, to the level of their knowledge and authority, provide requested information and documentation during the assessment process. For effective communication and where corrective action is necessary, management of the assessed organization(s) should participate in the assessment process.

## 7.3.2.3 Implementation Documents

Independent assessment activities are performed in accordance with procedure 2-B52-ADM-02 01, Independent Assessment, or its successor. The procedure establishes the method and processes for planning, scheduling, preparing, performing, and documenting independent assessment activities to measure item quality, process effectiveness, work processes and operations, and to promote improvement.

## 8.0 IMPLEMENTATION PLAN

The implementation plan for 10 CFR 830 120 will be submitted as a separate document

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## Graded Approach To The Requirements of 10 CFR 830.120

The criteria of 10 CFR 830 120 are applied in a graded approach as described below

- (1) Program There is one Kaiser-Hill Team Quality Assurance Program. It describes the roles and responsibilities of the Kaiser-Hill Team and the principal documents that implement the QA requirements. Implementing documents (procedures) have been developed, as appropriate, to utilize a graded approach for implementing the QA requirements and procedural instructions. Strategic planning for the Kaiser-Hill Team has focused on reducing the risks and hazards in the various Site facilities in order to accomplish the most mission work possible within a reasonable time period and within an allocated budget.
- (2) Personnel Training and Qualification Requirements for the indoctrination, training, and continuing (refresher) training are commensurate with the scope, complexity, and nature of the assigned duties, or the activity, to be performed. The Site Training Implementation Matrix (TIM) identifies the qualification and certification requirements by job designation for 14-nuclear facilities. The matrix will be expanded to address the other nine Category 2 and 3 nuclear facilities.
- (3) Quality Improvement It is important that all deficient conditions and nonconforming items be identified, therefore, it is not appropriate to apply graded approach to their identification. Items that do not conform to requirements are controlled to prevent inadvertent installation or use. Graded approach is built into the corrective action process. Each item that requires corrective action is evaluated and ranked according to its significance (from 0 to 11). The higher the significance or risk level, the more rigorous are the required corrective action elements. For example, items with a significance level of seven or greater are required to have the corrective actions independently verified. In addition, the cause analysis procedure requires the more significant events to receive a more rigorous cause analysis.
- (4) Documents and Records Graded approach is applied to the preparation, review, approval, issue, distribution, use, and revision of documents based on their relative importance, the intended recipients, the applicability of the document, and the need to know. The more important documents receive a unique identification number and controlled distribution. Graded approach has limited application in the specification, preparation, review, approval, and maintenance of Site records. If a document is, or will become, a record, it is governed by the Records Management Program. Government records must meet the requirements of the National Archives.

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and Records Administration (NARA) NARA dictates how records are to be maintained and provides approved and graded retention schedules

(5) Work Processes - Graded approach is built into Site work processes through the infrastructure programs and procedures. These include but are not limited to, Policies and Procedures, Issues Management, Operational Readiness Reviews, Lessons Learned, Configuration Management, Training and Qualification, Emergency Management, Security and Safeguards, Engineering, Maintenance, Conduct of Operations, Radiation Protection, Occurrence Reporting, Procurement, Waste Management, and Nuclear Safety. The Commitments Management and Corrective Actions Process provides a mechanism for prioritizing and evaluating unclassified deficiencies, concerns, and improvements. A brief description of example work processes follows.

## Occurrence Reporting

Based on the reporting requirements established by DOE, Kaiser-Hill provides a graded approach to the implementation of DOE reporting requirements Each event or occurrence is categorized by significance The categories in descending order of significance are Emergency, Unusual Occurrence, Off-normal Occurrence, and Internally Reportable Occurrence The first three categories are reported formally to DOE The fourth category warrants notification of company management but not DOE Occurrences that fall outside of these four categories do not require formal reporting Grading is also built into the need to hold a critique meeting and in the rigor of the cause analysis If the facts are known and documented, a critique meeting is not required. When the facts are not known, then a critique meeting is required to determine the facts. The rigor of the cause analysis and the resources to be applied to the cause analysis of an occurrence are dependent on the significance of the event and the potential risk the event or condition poses to the workers, the public, the environment, or the facility

### Operational Readiness Reviews

The Site operational readiness review (ORR) procedure that implements DOE Order 5480 31, Startup and Restart of Nuclear Facilities, provides a methodology for determining the breadth and depth of the readiness determination consistent with the hazards and complexity of the proposed facility transition. In addition to grading the readiness assessment by breadth and depth, the procedure is also graded by applicability. The ORR requirements do not apply to facilities that are less than Hazard Category 3. Appendix 2 of the procedure, Application of the Graded Approach in ORR Planning, provides factors to consider in developing the depth of the ORR.

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#### Maintenance

The Integrated Work Control Program (IWCP) provides a maintenance process for Operations Managers to identify, report, evaluate, assign resolution responsibilities, and close out deficiencies, modifications, and work requests. The process provides a graded approach based primarily upon importance to safety and the magnitude of the hazards. The maintenance process distinguishes between emergency work and non-emergency work. It provides a graded approach using a single work package development process. Using seven phases to develop each work package, the level of formality of the work package will be established based upon the six criteria of DOE definition of graded approach. The process permits routine maintenance work (such as repair of water fountains and touch-up painting) to be performed without a work package. It also provides for the use of preapproved Standard Work Packages for certain repetitive maintenance work.

#### Lessons Learned

The lessons learned process utilizes a graded approach in determining the relative significance of a potential lesson learned and in the manner that lessons learned are distributed to Site organizations and personnel Both onsite and offsite events and experience documents are screened to determine the applicability of the event or experience to the Site, to determine the significance, to determine the recurrence frequency, and to determine the recurrence probability Based on the results of the screening process, four types of lessons learned documents are or may be prepared Red/Urgent Lessons Learned are sent on red paper and alert onsite facilities and personnel of potential eminent hazards for which corrective actions may be needed Yellow/Caution Lessons Learned are sent on yellow paper and warn of potential event conditions Blue/Information Lessons Learned are sent on blue paper and provide information that may be of benefit to others Green/Good Work Practice Lessons Learned are sent on green paper and share a positive lesson or action that has the potential to be the basis of significant improvement or cost savings

### Procedures and Policies

Graded approach has not been incorporated to address the rigor required or the flexibility granted with respect to procedure format. However, the sitewide procedure development process incorporates graded approach in several other ways. The use of procedures is graded by four Use. Categories. The Use Category determines whether the procedure must be in hand, memorized, or referenced. Administrative procedures are included in Use Category 4. The process governing revisions, modifications, and changes to procedures is graded by two levels of effort, non-intent changes and intent changes. Graded approach is also

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incorporated through phased implementation. Site organizations have until December 31, 1997 to complete sitewide transition to the requirements of the procedure development process.

Prior to Kaiser-Hill being selected to be the Integrating Management Contractor, the Site had over 250 policies in the Policy Manual Many of the policies contained instructions. The Kaiser-Hill Team reviewed the existing policies and identified a minimum set of approximately 25 policies that express broad fundamental core values, principles, and expectations of senior management regarding the direction of the Site and Site personnel

- (6) Design - The design process utilizes graded system category classifications (three system categories based on the safety significance of the structures, systems, and components) for ensuring that all phases of design, construction, repair work, and decommissioning activities are subject to levels of review and control commensurate with the safety function of the system, component, or part The design process utilizes the graded procurement process (three quality levels based on importance to safety, safeguards, security, and intended use) when ordering new or replacement parts Design verification requirements are established using a graded approach based on importance to safety, the complexity of the design, and the use of the output (For example computer software program features used as tools to develop a preliminary model or used merely as an aid in reviewing results need not be verified However, program outputs used as inputs for final analysis are independently verified correct for each calculation, analysis, evaluation, or model) Many old as-built drawings are not current, therefore, before an as-built drawing is used as input for a vital safety system (VSS) design modification, the affected location must be walked-down and a fieldverified drawing generated Non-VSS modifications require accurate information as to field conditions, but a walkdown is not a requirement
- (7) Procurement The procurement process has graded procurement controls which specify the method for acceptance to verify that the purchased item/service performs its intended function and meets requirements. Procurement level is the term given to the graded procurement controls. The process uses three procurement levels (1, 2, and 3). Suppliers are evaluated using a graded approach based on relative importance to safety, safeguards, and security. Grading is applied to "router" codes to identify inspection requirements and/or quality assurance program approval requirements.

Grading is also used by Engineering to specify the proper storage classification level (A, B, C, or D) in accordance with the plant standard

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- (8) Inspection and Acceptance Testing Inspection and testing of specified items, services, and processes are conducted utilizing established, acceptance and performance criteria. Engineering personnel determine inspection criteria and post-maintenance testing requirements for maintenance and modifications. Inspection criteria and post-maintenance testing requirements are identified in maintenance work packages. Purchase requisitions identify the procurement level and the inspection requirements for procured items and services. Other than deciding whether inspection or post-maintenance testing is necessary, there is little grading that can be applied since inspections and post-maintenance testing requirements are based on national codes and technical standards.
- (9) Management Assessments The management assessment process is graded in that it empowers individual senior managers of the Kaiser-Hill Team to direct the development and implementation of management assessment programs for their respective organizations. The programmatic mission of an organization, as it relates to the application of QA requirements, will determine the management assessments performed. The Site level 1 procedure provides the programmatic framework for ensuring that an organization's management assessment program implements the management assessment requirement without being overly prescriptive or restrictive.
- (10)Independent Assessment - Independent assessments are planned and conducted to measure item and service quality, to measure the adequacy of work performance, and to promote improvement Flexibility (grading) in meeting these objectives is prescribed by prioritizing the program, scheduling assessments, and allocating resources in accordance with importance to safety, status, risk, and complexity of the item or process being assessed Emphasis is placed on elements of activities most important to safety and on the need to evaluate facility performance when allocating assessment resources Reactive independent assessments are performed in response to management requests, building or equipment problems, occurrence reports, negative performance trends, or unsatisfactory performance indicators. It is not appropriate to apply graded approach to the requirement that the group performing independent assessments have sufficient authority and freedom from the line to carry out its responsibilities

DOE Order 6430 1A Screen	5	Application Mandalory 1) For new standalone permanent buildings 2) When additions exceed 20% or 2000 sq 1) When project costs exceed 75% of four extsing system value. 4) On SSCs which were built to Gas all the cost of the	Authorization Basis documents) Recommended as Guidance for all other Projects
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Independent Safety Review/ORC Review Required	A/N	YES	2 2
Safety Evaluation Screen (SES) USQD Required	N/A	YES	Pre-Screen only to verify that system is really category 2
Procurement Level	Nuclear	Pt.1 (Approve wendors plus CMTR** when appropriate) (Default to Pl.2 when no approved vendors available)	PL.2 (Onsie testing inspections, and design margin analysis) Pl.3 OS&D*** Inspection only
Performance Standards for Engineering Maintenance & Surveillance	Nuclear Standards	FSAR TSR BIO and/or Code of Record and/or current DOE buckers Standards or default to industry "God Practice"  (Functional requirements of Authorization Basis must be inansained)	Industry "Good Practice"
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IN REPLY TO RFP CC NO

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August 2, 1996

96-RF-04538

Jessie Roberson Manager DOE, RFFO

SUBMITTAL OF THE KAISER-HILL TEAM QUALITY ASSURANCE PROGRAM AND THE 10 CFR 830 120 IMPLEMENTATION PLAN - RGC-082-96

Enclosed you will find the Kaiser-Hill Team Quality Assurance Program, Revision 3, and the 10 CFR 830 120 Implementation Plan, Revision 3 Both documents have been revised in response to the Department of Energy's (DOE) comments and Kaiser-Hill Team recommendations. The Kaiser-Hill Team operational definition of activities with the potential to cause radiological harm is activities which meet one or more of the following criteria.

- Activity provides for a control that protects the public, workers, and environment from unanalyzed or unanticipated radiological consequences exceeding the threshold criteria contained in applicable Codes of Federal Regulations
- Failure to adequately perform the activity adversely impacts the ability to
  protect the public, worker, and environment from unanalyzed or unanticipated
  radiological consequences exceeding the threshold criteria contained in
  applicable Codes of Federal Regulations.
- Performance of the activity can be an initiator of an accident that results in unanalyzed or unanticipated radiological consequences to the public, worker, or environment exceeding the threshold criteria contained in applicable Codes of Federal Regulations.

Activities meeting the above criteria are established as a result of the safety analysis included in the authorization basis that receives DOE approval

Kaiser-Hill intends to go forward with the implementation of the Quality Assurance Program and Implementation Plan utilizing this operational definition. Unless we receive direction otherwise, we will assume that approval of the Quality Assurance Program and Implementation Plan will constitute acknowledgment of our operational definition.

Resolution of DOE comments has been discussed with members of the DOE Implementation Plan Review Team and their further comments have been incorporated The Revision 3 documents supersede the Revision 2 documents previously submitted A summary of the changes from Revision 2 to Revision 3 is included in Section 1 0 of the Implementation Plan

Eleven task completion dates in Revision 3 of the Implementation Plan have been extended beyond the dates contained in Revision 2. The extensions vary from two to nineteen months. The extensions reflect changes in the tasks (from delivering a schedule

Caiser-Hill Company, L L C

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Jessie Roberson August 2, 1996 RGC-082-96 Page 2

to completing the work), reduction in resources (which has delayed work completion), and competing high priority work (which has delayed work completion)

If you have any questions regarding either document, please contact S  $\,$  J  $\,$  Enrietto at extension 4328 or L. C  $\,$  Smith at extension 5792

Very truly yours,

Robert Card Acting President Kaiser-Hill, L.L.C

RFW.rb

Enclosures. As Stated

Ong and 1 cc - Jessie Roberson